

REMARKS

The Office Action dated October 24, 2008 has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claims 1, 19, 32, 40, 51-53, 57, 60, 64 and 67-72 have been amended to more particularly point out and distinctly claim the subject matter of the invention. No new matter has been added. Claims 1-15, 17, 19, 21-30, 32-40 and 42-72 are presently pending.

The Office Action objected to the specification as allegedly failing to provide proper antecedent basis for the claimed subject matter. Specifically, the Office Action alleged that there is no support for a computer readable medium. This objection is respectfully traversed.

FIG. 2 illustrates two terminal devices 20 and 30, which include respective compressors/decompressors 22 and 32. In operation, a compressed item may include a compressed item code “00” “10” or “11”, which represents bits of data and may also include a “pos” field that provides position information. The compressor 22 and the decompressor 32, “are aware of the number of bits in the pos field 46.” The compressor and decompressor 32 operate at the bit level of the data communicated between the terminal devices 20 and 30, and, thus, must be able to support a computer readable medium if they are to process bits of information. The bit is the fundamental unit of a computer readable medium. To say that bits are read and processed by two devices that

do not include a computer readable medium is without merit. Accordingly, a computer readable medium is supported by the specification as filed. Withdrawal of this objection is kindly requested.

The Office Action rejected claims 51, 52, 67, and 68 under 35 U.S.C. §112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Specifically, the Office Action alleged that it is a requirement to set forth in the specification adequate disclosure showing what is meant by the language. Applicants respectfully traverse this rejection for at least the following reasons.

Claims 51, 52, 67, and 68 are means-plus-function claims, in accordance with 35 USC §112, sixth paragraph. The purpose of a means-plus-function claim is to recite claim recitations that do not include positive structural elements so that the claim may include more than one interpretation as to the “means” which are used to perform the stated claim features. 35 U.S.C. §112, sixth paragraph, permits and requires the use of the term “means” in accordance with the claim recitations. Furthermore, the claim recitations in a means-plus-function claim may be defined by their apparent functionality and not solely by what “structure” may be associated with the claims functionality. See *Microprocessor Enhancement Corp. et al. v. Texas Instruments et al.* 520 F.3d 1367, and 2007-(1249-1286) at page 13, lines 1-13, (CAFC 2007). FIG. 2 illustrates two communications devices which are configured to pass data to one another. Given the example in FIG. 2, there is no reasonable expectation that there is a lack of structure to

support a means-plus-function type of claim. Accordingly, §112, sixth paragraph, protection must be afforded to claims 51, 52, 67, and 68. Withdrawal of this rejection is kindly requested.

The Office Action rejected claims 69-72 under 35 U.S.C. §101 as allegedly being directed to a method which does not produce a useful, concrete, and tangible result, e.g. the claim is directed to non-statutory subject matter. This rejection is respectfully traversed.

Referring to FIG. 2 of the present application, this figure illustrates a process. FIG. 2 illustrates two terminal devices 20 and 30, which include respective compressors/decompressors 22 and 32. In operation, a compressed item may include a compressed item code “00” “10” or “11”, which represents bits of data and may also include a “pos” field that provides position information. The compressor 22 and the decompressor 32, “are aware of the number of bits in the pos field 46.” The compressor and decompressor 32 operate at the bit level of the data communicated between the terminal devices 20 and 30, and, thus, must be able to support a computer readable medium if they are to process bits of information.

Support for the definition of a computer readable medium is provided by *In re Lowry*, 32 F.3d 1579, 1583-1854, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994), which states: “When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be

realized" (see §2106.01 of the MPEP). In the present application, FIG. 2 illustrates at least two computer readable mediums that communicate data at the bit level. The bit is the fundamental unit of computer language. The devices 20 and 30 both include computer readable mediums in order to process the bit data transferred and received. Furthermore, the claim preambles are in accordance with U.S. patent practice and are patentable subject matter under §101. Withdrawal of the rejection is kindly requested.

The Office Action rejected claims 1-3, 14, 15, 19, 21, 22, 30, 32-34, 40, 42, 43, and 51-72 under 35 U.S.C. §103(a) as being allegedly unpatentable as obvious over Holmes (U.S. Patent No. 5,864,860) ("Holmes") in view of Venters, *et al.* (U.S. Patent No. 5,579,316) ("Venters"). The Office Action took the position that Holmes discloses all of the features recited in the claims except for packet headers. The Office Action then relied on the disclosure of Venters as allegedly curing those deficiencies in Holmes. These rejections are respectfully traversed for at least the following reasons.

Claim 1, upon which claims 2-15 and 17 depend, is directed to a method for header compression including communicating packet header information. The method also includes comparing a current item list containing a plurality of current items of the packet header with a reference item list containing a plurality of reference items. The method further includes determining a type of classification of the current list based on said comparing of the current item list and the reference item list. The method additionally includes using the determined type of classification to control the communication and compression of the packet header information. The classification of

the items in the current item list associates the current list with at least one of a plurality of different predetermined encoding schemes.

Claim 19, upon which claims 21-30 depend, is directed to a method for header compression including classifying at least one item of a current item list containing a plurality of items of a packet header by comparing the current item list with a reference list containing a plurality of items. The method includes determining a type of classification of the current item list based on said comparing of the items in the current item list with the reference item list. The classification of the items in the current item list associates the current item list with at least one of a plurality of different predetermined encoding schemes. The method also includes, based upon the classifying of the at least one item of the current item list, forming a compressed list including said at least one item. The method further includes transmitting the compressed list as a compressed packet header.

Claim 32, upon which claims 33-39 depend, is directed to an apparatus including a processor configured to compare a current item list containing a plurality of current items of a packet header with a reference item list containing a plurality of reference items, to determine a type of classification of items in the current item list based on said comparing of the current item list and the reference item list, and to communicate compressed information based upon the determined type of classification. The classification of the current item list associates items in the current item list with at least one of a plurality of different predetermined encoding schemes.

Claim 40, upon which claims 42-50 depend, is directed to an apparatus including a processor configured to classify at least one item of a current item list containing a plurality of items of a packet header by comparing the current item list with a reference list containing a plurality of items and based upon the classifying of the at least one item of the current item list to form a compressed list including said at least one item. The apparatus also includes a transmitter configured to transmit said compressed list. The processor is configured to determine a type of classification of the current item list based on the comparing operation. The classification of the current item list associates the current item list with at least one of a plurality of different predetermined encoding schemes.

Claim 51 is directed to an apparatus including comparing means for comparing a current item list containing a plurality of current items of a packet header with a reference item list containing a plurality of reference items. The apparatus also includes determining means for determining a type of classification of items in the current item list based on a comparing of the items the current item list and the reference item list. The apparatus further includes communicating means for communicating compressed packet header information based upon a determined type of classification. The classification of the current item list associates the current item list with at least one of a plurality of different predetermined encoding schemes.

Claim 52 is directed to an apparatus including classifying means for classifying at least one item of a current item list containing a plurality of items of a packet header.

The apparatus also includes comparing means for comparing the current item list with a reference list containing a plurality of items. The classifying means is configured to classify based on a comparing of the current item list with the reference list. The classification of the current item list associates the current item list with at least one of a plurality of different predetermined encoding schemes. The apparatus further includes forming means for, based upon the classifying of the at least one item of the current item list, forming a compressed list including the at least one item. The apparatus additionally includes means for transmitting said compressed list.

Claim 53, upon which claims 54-56 depend, is directed to a method for header decompression. The method includes receiving packet header information generated by a process in which a current item list containing a plurality of current items of said packet header is compared with a reference item list containing a plurality of reference items, a type of classification of the current item list is determined based on said comparing of the items of current item list with the reference item list. The determined type of classification is used to control the communication and compression of the information. The classification of the current item list associates the current item list with at least one of a plurality of different predetermined encoding schemes. The method also includes decompressing the received header information.

Claim 57, upon which claims 58-59 depend, is directed to a method for header decompression. The method includes receiving packet header information generated by a process in which at least one item of a current item list containing a plurality of items of

said packet header is classified by comparing the current item list with a reference list containing a plurality of items. The classification of the items in the current item list associates the current item list with at least one of a plurality of different predetermined encoding schemes. Based upon the classifying of the current item list, a compressed list including said at least one item is formed. The compressed list is transmitted as a compressed packet header. The method also includes decompressing the received header information.

Claim 60, upon which claims 61-63 depend, is directed to an apparatus for header decompression. The apparatus includes a receiver configured to receive packet header information generated by a process in which a current item list containing a plurality of current items of said packet header is compared with a reference item list containing a plurality of reference items, a type of classification of items in the current item list is determined based on said comparing of the current item list and the reference item list. The determined type of classification is used to control the communication and compression of the packet header information. The classification of the current item list associates the current item list with at least one of a plurality of different predetermined encoding schemes. The apparatus also includes a decompressor configured to decompress the received header information.

Claim 64, upon which claims 65-66 depend, is directed to an apparatus for header decompression. The apparatus includes a receiver configured to receive packet header information generated by a process in which at least one item of a current item list

containing a plurality of items of the packet header is classified by comparing the current item list with a reference list containing a plurality of items. The classification of the current item list associates the current item list with at least one of a plurality of different predetermined encoding schemes. Based upon the classifying of the current item list, a compressed list including the at least one item is formed. The compressed list is transmitted as a compressed header. The apparatus also includes a decompressor configured to decompress the received header information.

Claim 67 is directed to an apparatus for header decompression. The apparatus includes receiving means for receiving packet header information generated by a process in which a current item list containing a plurality of current items of the packet header is compared with a reference item list containing a plurality of reference items. A type of classification is determined based on the comparing of the current item list and the reference item list. The determined type of classification is used to control the communication and compression of the information. The classification of the current item list associates the current item list with at least one of a plurality of different predetermined encoding schemes. The apparatus also includes decompression means for decompressing the received header information.

Claim 68 is directed to an apparatus for header decompression. The apparatus includes receiving means for receiving packet header information generated by a process in which at least one item of a current item list containing a plurality of items of the packet is classified by comparing the current item list with a reference list containing a

plurality of items. The classification of the current item list associates the current item list with at least one of a plurality of different predetermined encoding schemes. Based upon the classifying of the current item list, a compressed list including said at least one item is formed. The compressed list is transmitted as a compressed header. The apparatus also includes decompression means for decompressing the received packet header information.

Claims 69-72 recite computer program-type claim variations of method claims 1, 19, 53 and 57.

Applicants respectfully submit that the combination of Holmes and Venters fails to disclose or suggest all of the elements of any of the presently pending claims.

Holmes relates to compression of structured data. Specifically, as explained in columns 3-4, Holmes relates to data compression in the area of delimited text databases. For example, each row (or record) of data will contain a set of fields delimited from each other by a character. Holmes discloses comparing a field of a current record with a corresponding field of a previous record. Holmes suggests creating a compressed form of the current record based on the current row. The compressed form of the current record is the same as the current record except that, if the contents of a field of the current record are identical to that of the corresponding field in the previous record, a single character (such as a ".") is used in place of the contents. When all of the fields have been compared and (if appropriate) compressed, the compressed form of the current record is passed to the client.

In other words, in Holmes a token is sent if the contents in a current record match the contents in a previous record. Holmes is designed for a situation involving structured data, not lists. For example, Holmes determines whether there is a match, as opposed to determining and encoding a difference. Holmes also does not appear to teach a mechanism for encoding the addition, removal, or change of an item.

Holmes fails to disclose “determining a type of the current list.....wherein the classification of the current item list associates the current item list with at least one of a plurality of different predetermined encoding schemes”, as recited, in part, in independent claim 1 and similarly in independent claims 19, 32, 40, 51-53, 57, 60, 64 and 67-72.

The present application provides that a current classification list of items in a packet header are classified as belonging to three transformations cases (e.g., A, B and C) (see top of page 8 of the present application). In transformation case A, an item in the current item list is also found in the reference list meaning that the contents of the items in both lists are the same. In case B, the items are comparable, but, are not the same. In case C, the item in the current item list is not in the reference list at all. The specification further provides that for “a given item in the current item list, the compressor 22 may determine which one of the transformation cases [A, B or C] applies. Depending on this determination, a different encoding scheme may be used for the communication to the second terminal device” (see bottom of page 8 through line 5 of page 9 of the present application).

The currently pending claims recite that the “classification of the current item list associates the current item list with at least one of a plurality of different predetermined encoding schemes”, as recited, in part, in independent claim 1 and similarly in independent claims 19, 32, 40, 51-53, 57, 60, 64 and 67-72. Contrary to the subject matter recited in the current claims, Holmes discloses that the same encoding scheme is applied to each of the records 1, 2, 3 etc. For example, Holmes is using a basic compression scheme that simply substitutes tokens for previously sent data (see column 4, lines 30-50 of Holmes). In Holmes, if a field in a current record matches a field in a previous record, then, a token is put in place of the matched data portion of the record to reduce duplication and provide compression.

Contrary to the disclosure of Holmes, the present application offers a compression scheme that looks to the header of the packet, examines the items in a list that are within the header of the packet and associates any of a plurality of encoding schemes for each of the items in the header of the packet. The encoding schemes may be applied individually to each of the items in the packet header. Holmes does not disclose such a feature. Holmes does not apply to lists and certainly not to lists in a packet header. The records in Holmes (i.e., Record 1, 2 and 3) are not lists having individual items.

Referring to the “records” in Holmes, at best, the records themselves represent individual data elements each belonging to a single data record. For example, the records 1, 2 and 3 are interchangeable and may substitute data freely between one another to reduce duplicate data transmissions. Conversely, the present application includes an item

list 10, which may include, for example, a contributing source (CSRC) list, an address list etc. (see page 6 of the present application). Furthermore, the present application provides examples of encoding schemes which may be applied to current item list. For example, the encoding schemes include at least one of seven example encoding schemes (see page 11 of the present application). Holmes does not offer individualized encoding scheme associations with a current item list.

In addition to the above-noted deficiencies of Holmes, Applicants submit that Venter fails to cure the deficiencies of Holmes with respect to the claims. Venter discloses a compression scheme that reduces the overall length of header information in a data frame. Specifically, macro code is used to generate a macro-header byte (PID) that is substituted for normally transmitted header data. The substitution scheme reduces the overall bits transferred for a particular header of a data frame (see column 6, lines 50-65 of Venter).

Venter fails to disclose or suggest “determining a type of the current list...wherein the classification of the current item list associates the current item list with at least one of a plurality of different predetermined encoding schemes”, as recited, in part, in independent claim 1 and similarly in independent claims 19, 32, 40, 51-53, 57, 60, 64 and 67-72. The composition of the header of the data frame disclosed in Venter is not classified, and, does not include a list of items. If Venter fails to disclose a list of items in a header portion of a packet, then, certainly, Venter does not disclose

classifying each the list by associating the list with at least one of a plurality of encoding schemes, as recited in the claims.

A *prima facie* case of obviousness requires that all of the features of the claims be present in the prior art, and that the combination of those features in the prior would have been obvious. In this rejection, Holmes and Venters, taken individually or in combination, fails to disclose all of the elements of the claims. Thus, the claims of the present application are *prima facie* non-obvious with respect to Holmes, and it is respectfully requested that the rejection of independent claims 1, 19, 32, 40, 51-53, 57, 60, 64, and 67-72 be withdrawn.

Claims 2-3, 14-15, 21-22, 30, 33-34, 42-43, 54-56, 58-59, 61-63, and 65-66 depend respectively from, and further limit claims 1, 19, 32, 40, 53, and 57. Thus, it is respectfully submitted that each of claims 2-3, 14-15, 21-22, 30, 33-34, 42-43, 54-56, 58-59, 61-63, and 65-66 recites subject matter that is neither disclosed nor suggested in the cited art. It is, therefore, respectfully requested that the rejection of claims 2-3, 14-15, 21-22, 30-31, 33-34, 42-43, 54-56, 58-59, 61-63, and 65-72 be withdrawn.

Claims 4-13, 17, 23-29, 35-39, and 44-50 were rejected under 35 U.S.C. §103(a) as being unpatentable over Holmes in view of Venters and further in view of U.S. Patent No. 6,535,925 of Svanbro, et al. (“Svanbro”). The Office Action took the position that certain further limitations of the rejected claims were not disclosed or suggested by the combination of Holmes and Venters. The Office Action, therefore, cited Svanbro to

remedy the deficiencies of Holmes and Venters. Applicants respectfully traverse this rejection.

Svanbro generally relates to packet header compression using division remainders. Specifically, in columns 5-8, Svanbro describes a header compression (Figure 3), time stamp compression (Figure 4), time stamp decompression (Figures 5 and 7), and header decompression (Figure 6). Svanbro recommends using convention header compression techniques augmented by separately compressing the time stamp. With regard to the time stamp compression, Svanbro teaches that advance knowledge obtained by empirical observation can be used to reduce the number of bits needed to encode a relatively predictable time stamp in an application such as a real-time speech service.

Claims 4-13, 17, 23-29, 35-39, and 44-50 are dependent upon claims 1, 19, 32, and 40 and contains all of the limitations thereof. As discussed above, the combination of Holmes and Venters fails to disclose or suggest all of the elements of claims 1, 19, 32, and 40. In addition, Svanbro fails to cure the deficiencies in Holmes and Venters as Svanbro also fails to disclose or suggest “determining a type of the current list.....wherein the classification of the current item list associates the current item list with at least one of a plurality of different predetermined encoding schemes”, as recited, in part, in independent claim 1 and similarly in independent claims 19, 32, 40, 51-53, 57, 60, 64 and 67-72. Thus, the combination of Holmes, Venters and Svanbro fail to disclose or suggest all of the elements of claims 4-13, 17, 23-29, 35-39, and 44-50. Furthermore,

claims 4-13, 17, 23-29, 35-39, and 44-50 should be allowed for at least their dependence upon claims 1, 19, 32, and 40, and for the specific limitations recited therein.

For the reasons set forth above, it is respectfully submitted that each of claims 1-15, 17, 19, 21-30, 32-40, and 42-72 recites subject matter that is useful, definite, and neither disclosed nor suggested in the cited art. It is, therefore, respectfully requested that all of claims 1-15, 17, 19, 21-30, 32-40, and 42-72 be allowed, and that this application be passed to issuance.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned representative at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



Kamran Emdadi
Registration No. 58,823

Customer No. 32294
SQUIRE, SANDERS & DEMPSEY LLP
14TH Floor
8000 Towers Crescent Drive
Vienna, Virginia 22182-6212
Telephone: 703-720-7800
Fax: 703-720-7802

KE:sjm